CS3350 Assignment 1

Exercise 1:

a) Does the database allow payments to not be associated with a customer?
No. A payment does not exist without a customer.

Can a single payment pay for two customers' invoices?
Yes. Payments have no direct relationship with invoices.

b) Can a fortune teller have multiple mentors?
Yes, according to the relationship.

Can they have no mentors at all?
Yes, according to the relationship.

Can a fortune teller be listed as his / her own mentor?
Sure, why not?!

c) Can a session have no predictions associated with it?
Yes, zero to many.

d) Can a session involve two customers?
No, this is a mandatory relationship.

What about two fortune tellers?
No again. This is another mandatory relationship.

e) Can a customer have two addresses on file? Can they have no address?

No, and Yes. A customer can have only zero or one address on file.

f) Looking at a particular prediction, is it possible to know who made it, what client it was for, and what method of fortune-telling was used for it? Explain.

Yes, it is possible to know which fortune teller made the prediction, and for which client. A prediction always has a session, and a session always has a fortune teller and a customer. However the method is unknown due to the many-to-many relationship.

g) Is it possible to identify to which session a particular payment applies? Explain.

No. A customer could potentially have multiple payments – these aren't necessarily associated with a specific session.

h) Invoices are issued at the end of each month. When preparing an invoice for a particular customer, how would the system determine the amount to bill?

The system would simply total all billable items associated with the invoice.

Would it be possible to send customer an invoice specifying to what session each item corresponds?

Yes. If a session has a billable item it must be added to the invoice. The invoice will then contain any needed specifics.

i) Madame Z pays her fortune tellers based on how much money each of them brought in. Will she be able to figure out how much of her revenue comes from a particular fortune teller?

Yes. All billable items have a session, and all sessions have fortune tellers. Madame Z would just have to total up each fortune teller's billable items.

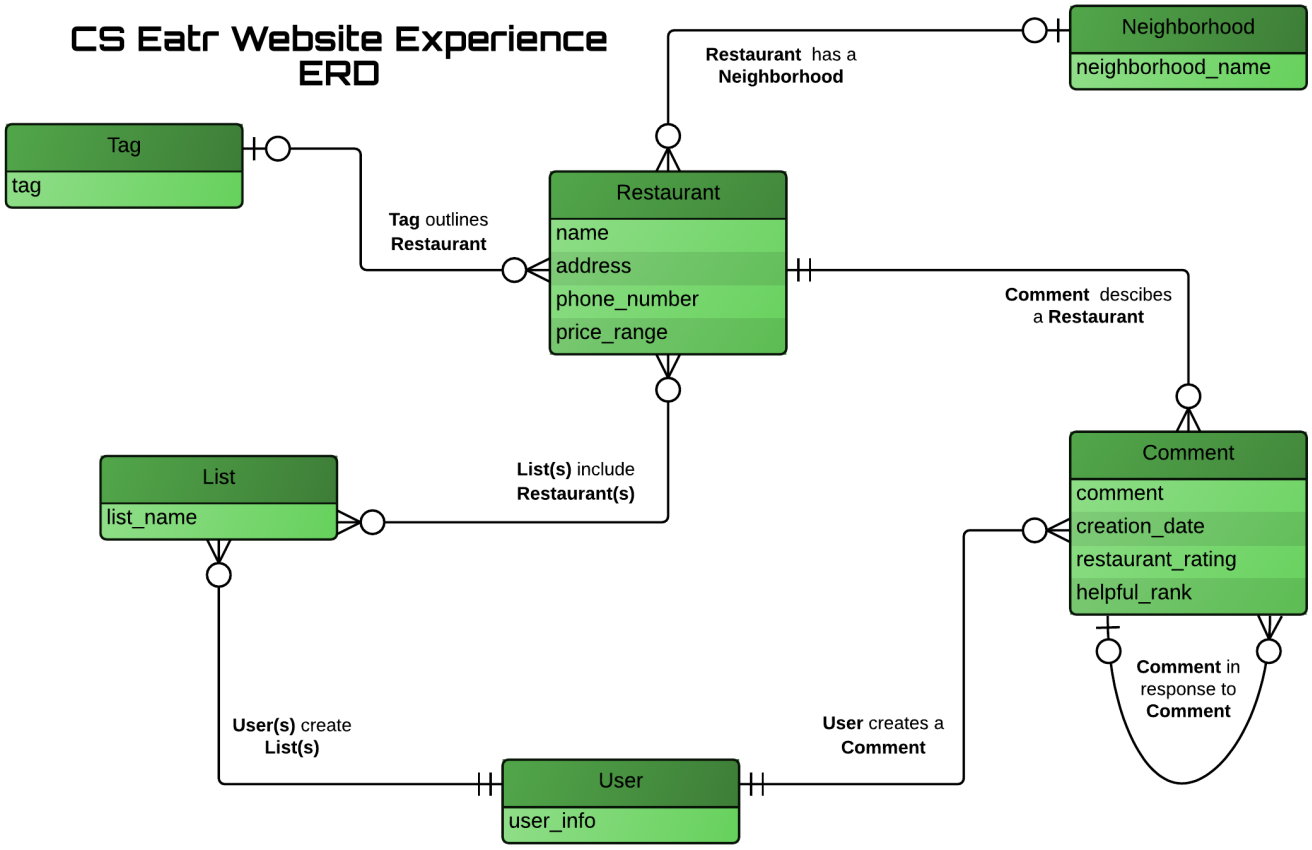
Suppose that Madame Z wants to only pay fortune tellers when the customers whom they served actually pay their bills. Will she be able to do that?

No. Payments go towards the total of the billable items summed in the invoice. If a customer pays more or less than they are supposed to, there's no way of knowing what billable items are covered. If payments were made for each billable item then Madame Z would be able to accomplish this.

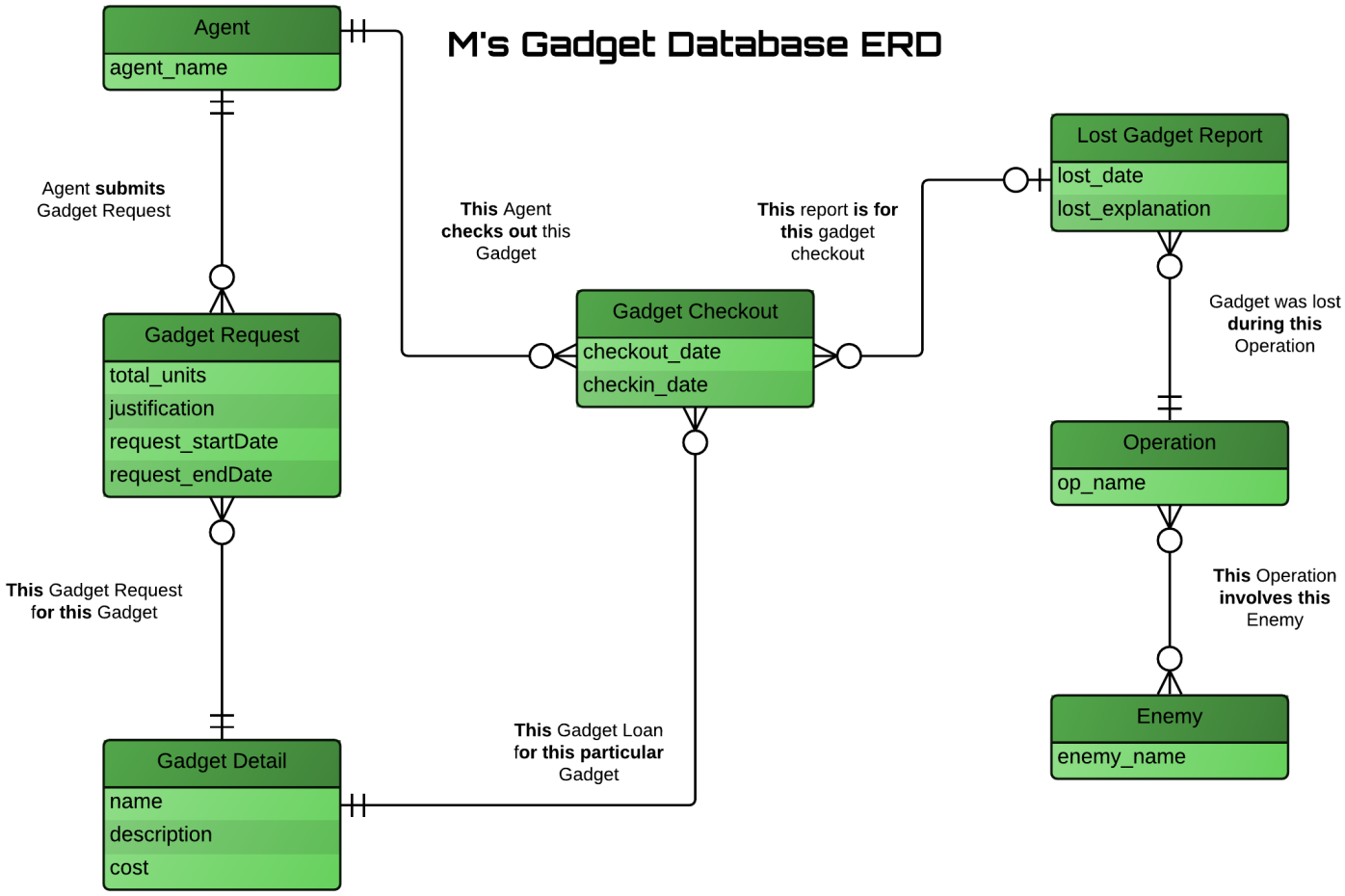
j) Does the diagram contain any relations that would need to be broken-up with associative entities? If so, which ones? Explain.

Yes. **Fortune teller** has a many-to-many relationship with **method**. The mentoring process of the **fortune teller** is also many-to-many and should be simplified.

Exercise 2:


CS Eatr Website Experience ERD
Neighborhood
neighborhood_name
Restaurant has a Neighborhood
Tag
tag
Tag outlines Restaurant
Restaurant
name
address
phone_number
price_range
Comment descibes a Restaurant
List
list_name
List(s) include Restaurant(s)
Comment
comment
creation_date
restaurant_rating
helpful_rank
Comment in response to Comment
User(s) create List(s)
User creates a Comment
User
user_info

Exercise 3:


M's Gadget Database ERD
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Agent submits Gadget Request
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justification
request_startDate
request_endDate
This Gadget Request for this Gadget
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description
cost
This Agent checks out this Gadget
Gadget Checkout
checkout_date
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This Gadget Loan for this particular Gadget
This report is for this gadget checkout
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Operation
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